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BEACHHEAD IN ANTARCTICA—1,805 Americans, with Ships and Aircraft, Will Soon Launch a New Attack on the Icebound Continent. Purpose: Knowledge, Not Conquest

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bases, one of them at or next to the South Pole itself. Some men will spend the gruelling winter, February to October, 1956, in the white wastes, preparing bases for the party of American scientists due to arrive in January, 1957. Early in 1959—autumn in Antarctica—the Task Force will pick up scientists and military personnel and take them home. This will end International Geophysical Year.

Such a mammoth-scale operation depends on meticulous planning, intricate teamwork, and plenty of old-fashioned human grit. The planning started with last year's reconnaissance by the Navy icebreaker *Atka*, when sailors found that Admiral Byrd's historical base on the Bay of Whales had been sheared off by grinding ice masses. They recommended a new landing place for Operation Deepfreeze—Kainan Bay, some 30 miles east of the old site. First task facing Deepfreeze's icebreakers is to probe the unpredictable Antarctic pack ice and see if this new Little America is still suitable. If so, a party of men will go ashore to make their way overland toward Deepfreeze's second base, Byrd Station, 500 miles away, scouting a tractor route as they go.

Icebreakers will turn back to take up positions along with cargo ships between Antarctica and New Zealand. Two hundred and fifty miles apart, the ships will act as radio beacons and possible rescue stations for aircraft making the uncharted 2,250-mile nonstop flight to the white continent. If a plane is forced to ditch, one of the ships will be no more than 125 miles from it. This historical flight is scheduled for late December, possibly Christmas Day, a time when Antarctica's summer temperature soars perhaps as high as the freezing mark.

Task Force ships will then rendezvous at Scott Island and set out for Little America and McMurdo Sound where the air base will stretch among snowdrifts. Fuel barges will be towed close to shore and allowed to freeze in. Men and supplies will darken the ice barrier. Weatherproof huts will sprout in the milky waste. And at the first touch of winter's grip the ships will steam north leaving a few hardy adventurers to stick it out through the long night.

For the next four years ships will come and go, supplying bases, replacing men. Somehow, a South Pole station will be built nearly 800 miles from Little America, supplied by planes which must cross 15,000-foot mountain ranges in order to reach the 10,000-foot-high polar plateau. Winter temperature may hit 110 below zero.

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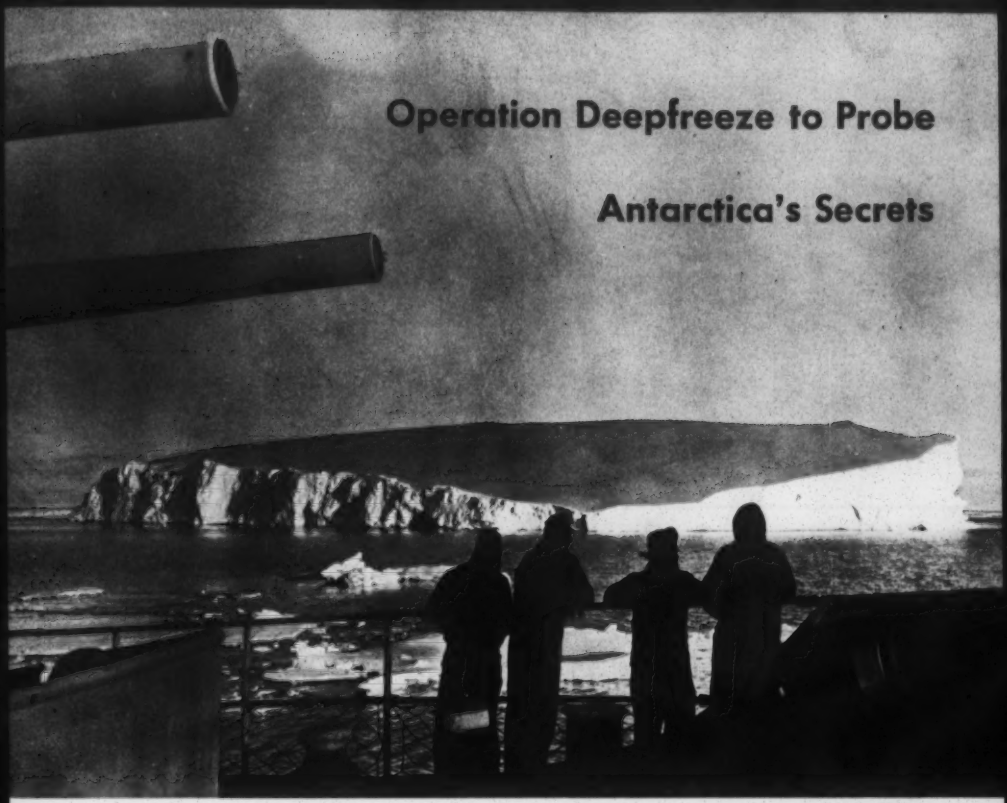
EXPLORER PEERS AT HIS TARGET— During the 1946-47 Expedition, Admiral Byrd Dropped a UN Flag on the South Pole. Now He Proposes Using Antarctica as a Gigantic Frozen Food Locker for Storing Surplus Crops Against Possible Lean Years

Operation Deepfreeze to Probe Antarctica's Secrets



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The world's coldest, emptiest, most unlivable continent will begin buzzing with unaccustomed life within the next few months. Antarctica, icebound land nearly as big as the United States and Europe together, will be "invaded" by explorers and scientists from all over the world.

Australia, New Zealand, the United Kingdom, Chile, Argentina, Norway, France, Belgium, Spain, Japan, South Africa, the Soviet Union, and the United States are making plans, in some cases tentative, to establish bases on or near Antarctica. Purpose: to join a world-wide study of earth sciences planned for International Geophysical Year, 1957-58.

The United States expedition, Navy Task Force 43, is getting ready now to set course for the bottom of the world on "Operation Deepfreeze." Officer in Charge is Rear Admiral Richard E. Byrd, Trustee of the National Geographic Society, who, on four previous trips, has mapped more than 1,000,000 square miles of Antarctica. Rear Admiral George Dufek, able veteran of two previous Antarctic expeditions, commands the task force. One hundred and ninety-four officers and 1,611 enlisted men make up Deepfreeze's personnel.

With three cargo vessels, three icebreakers, one oiler, two fuel barges, 19 aircraft, and about 30 tons of equipment per man (GI's in World War II rated only seven tons apiece), the expedition will establish four

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Whooping Cranes Battle Extinction

Conservation groups in the United States and Canada are anxiously watching the fall and spring migrations of a small flock of awkward, long-legged birds. The five-foot-tall whooping crane, just now settling down in Texas after a 2,000-mile flight from Canada, is flirting with extinction. Twenty-one survivors made the trip north last spring. Five young whoopers are known to have been born during the summer nesting season. This makes a better total than the low of 15 cranes which flew to the Aransas National Wildlife Refuge on the Texas coast in 1941. But it falls short of the 34 birds observed in 1949-50.

America's tallest bird, named for its buglelike call, flies too high and fast to be easily seen, and is furtive in its nesting habits. One nesting area has been spotted in Wood Buffalo National Park, near Great Slave Lake in Canada. There are probably other places where the great white birds with crimson heads and black wingtips hatch their fledglings.

On arrival at Aransas the hardy young are colored buff, cinnamon, and russet. Then about five months old, they have flown for only five or six weeks, the last two or three spent behind migrating adults. The autumn trip southward is often imperiled by hunters.

Whoopers are noted walkers on the wintering ground. Their gawky young trail behind parading parents. To one observer a young whooper looked like "an over-tall 12-year-old boy whose hair needed brushing." The birds stake off territories of perhaps a mile in diameter and warn off other whooping cranes, the male charging intruders with the female and young in his wake. By February the fledgling looks almost adult. By March or April, when the prancing pre-nuptial dances of the parents grow intense, the young bird isn't wanted around. Parents shoo it off.

The whooper, however, doesn't wean easily. Despite chasings it may return and rejoin the family circle, flying northward with the parents.

Bird lovers everywhere are trying to protect breeding and wintering grounds from the long arm of "civilization." For the whooping crane, probably never too numerous, is perilously close to joining the great auk, the passenger pigeon, the heath hen, and other American birds in disappearance from the world.

HELEN G. CRUICKSHANK

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LITTLE AMERICA, 1946-47—A Tent City with Igloo Doors Mushroomed on Snow. Crumbling Ice Erased This Base, but "Deepfreeze" Will Build a New Little America

What will this mammoth undertaking by so many nations prove? How will the $10,000,000 expense of Operation Deepfreeze be justified? The answer lies in the concept of International Geophysical Year. Twice before, in 1882 and 1932, there have been International Polar Years during which many nations coordinated polar expeditions, experiments, and observations, sharing the knowledge gleaned. One result of 1932 was the development of long-range communications—efficient radio broadcasting over thousands of miles.

Some 40 nations participating in IGY will man observation posts all over the world. At Antarctica scientists will study meteorology, glaciology, cosmic rays and other natural phenomena, sharing their discoveries and adding to man's understanding of his planet.

ANTARCTIC ENVOYS—Penguins, Like These Emperors, Always Greet Explorers, Often Join Them in Homeward Voyages

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National Geographic References:

Map—Northern & Southern Hemispheres (on paper—50¢; fabric—$1)

Magazine—Oct. 1947, "Our Navy Explores Antarctica," (75¢); July, 1936, "My Flight Across Antarctica," ($1); Oct., 1935, "Exploring the Ice Age in Antarctica," ($1)

School Bulletins—Nov. 29, 1954, "Antarctica: Treasure Chest or Pandora's Box?" (10¢); April 4, 1955, "Antarctic Ice Ends Epic of Little America," (10¢)

the mountainous little country is free. For the first time 17-year-olds will walk to school through streets empty of alien uniforms.

Once-mighty Austria, now a republic only about the size of Maine, still is rich in oil, boasts fine modern factories, and taps plentiful mountain-fed hydroelectric power. Farms cling to hillsides which in winter double as ski slopes, earning tourist money (above) for many of Austria's 7,000,000 people. Picturesque cities like Innsbruck, girded with looming alpine peaks (right), draw visitors from all the world.

Austrians speak German and share a loving pride in their nation, with its flower-decked mountain meadows and villages of brightly painted houses.

Tasty, flaky *apfelstrudel*, dear also to Pennsylvania Germans, is an honored native dish. And music —played or heard—is a national pastime. Salzburg (below) presents an annual music festival known round the world. Vienna reared or lured such composers as Beethoven, Wagner, Mozart, Schubert, Bach, the Strausses. Viennese dial a certain telephone number and get an accurate tone to tune violins.

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Austria Greets Freedom after 17-year Lapse

Illustrations by National Geographic Photographer Volkmar Wentzel

Glittering carriages of the Hapsburgs no longer whir along such Vienna thoroughfares as Kaerntner-Strasse (left). But there is almost as much joy in Austria now as in the days of the empire when ladies in rich gowns dipped and swayed with bemedaled escorts to the lilt of a new Strauss waltz.

The last foreign soldiers—American, British, French, and Russian—are leaving Austrian soil. They have been stationed there since the end of World War II. Eight years the Big Four nations have been seeking agreement on a treaty which would end this occupation. Last summer they succeeded. For the first time since 1938, when Hitler's Nazi troopers moved in to make Austria a German province,

Thus occurred the first heart-stopping landfall in the New World—the speck of land in the Bahamas called San Salvador or Watling. But after all, what Rodrigo sighted was only an island. Does Columbus's fame as discoverer of America rest on this alone? Far from it. A study of the Great Navigator's subsequent explorations reveals that he cruised hundreds of miles along mainland coasts of North and South America, besides discovering countless Caribbean islands, large and small.

The third voyage of Columbus brought his first major continental discovery—South America. In 1498, with a fleet of six small vessels, he set a course more southerly than his previous routes. Caught in the doldrums, the caravels wallowed helplessly without wind for eight days, while food spoiled in the heat. Then a vagrant branch of the southeasterly trades filled sails. The adventurers scudded westward, spirits restored. A fast crossing brought the Admiral to a point he reckoned as due south of the Caribbean islands. Short of water, he swung his ships north and within a matter of hours a crow's-nest lookout spotted land.

It was another island, marked by three mountains which gave it the name Trinidad. Columbus skirted its southern shore, refilled water casks, and, on August 1, 1498, sighted what looked like another island low on the southern horizon. This was Bombeador Point, Venezuela.

Crossing the Gulf of Paria which separates Trinidad from the mainland, Columbus explored the coast of Venezuela's Paria Peninsula. On August 5, a landing party pulled into a cove. The small boat's keel grated on clean, white sand. Bushes and small trees lined the shore; beyond loomed distant mountains. Monkeys chattered as sailors leaped to the beach—the first known Europeans to set foot on South America.

In the eyes of Spain, such adventures were all very well, but they couldn't pay the cost of expeditions. Unable to produce gold or run a successful colony, Columbus fell from grace. Determined to restore his reputation, he sought to make another voyage—this time to probe the western Caribbean and find that elusive route to India.

Four caravels set sail in May, 1502. The fleet reached Caribbean waters in time to

LUIS MARDEN, NATIONAL GEOGRAPHIC STAFF

COLUMBUS WAS HERE—The Admiral's Last Voyage Brought Him Gold-Hunting Through the San Blas Islands off Panama

THE MOLINEAUX-WRIGHT CHART OF 1600, Copied Here, Shows Columbus's Four Voyages. His Second Venture, in 1493, Touched Hispaniola, Where He Had Left a Fort with a Small Garrison on His First Voyage. He Found It Destroyed, the Men Killed

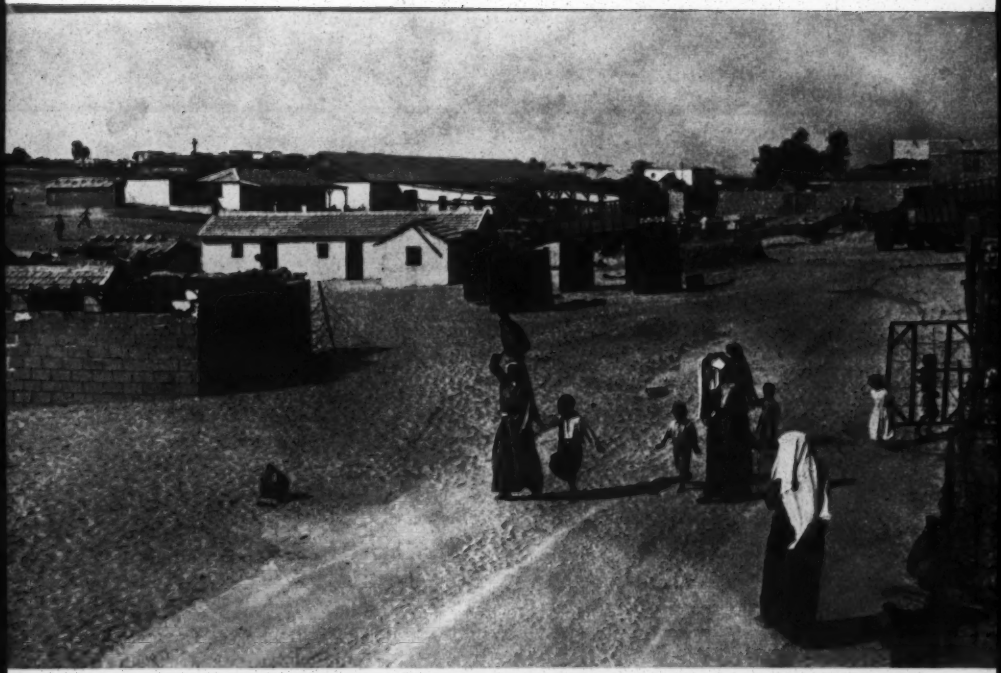
Columbus: Four Voyages into the Future

It is two in the morning of October 12, 1492. A waning moon lights tropical waters that heave before a brisk easterly trade wind. Two Spanish caravels, roughly the size of a modern yacht, toss scudding spray as they run due west. Following them lumbers a bigger, slower ship.

Aboard this small fleet, bearded sailors trim sheets and braces, relieve each other at bucking tillers, constantly strain tired eyes probing the seemingly endless moonlit waters ahead. The watch below tosses restlessly, unable to sleep. On the flagship's high sterncastle a tall, muscular, long-faced man with stubborn blue eyes paces nervously. It has been ten long weeks since his ships slipped out of the little port of Palos on Spain's southwestern coast. He has promised his near-mutinous men to turn back for home this day if land is not sighted. The freshening breeze worries his sea-wise captains. It will be hard to beat home against it. Yet frequent signs of land—drifting branches, bits of wood, plants—have put every man jack on edge.

On the forecastle of one of the caravels, called *Pinta*, the lookout rubs his eyes and stares forward. Rodrigo de Triana is a seasoned tar, not apt to be misled by false sightings. Yet he could swear the moonlight, just now, glimmered on white cliffs, dead ahead. There they are again —two cliffs with a dark strip connecting them. By San Fernando, land at last.

"Tierra!" he bawls.



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CHANGE COMES TO TIMELESS GAZA—Motor Trucks and Concrete-Block Buildings Indicate the 20th Century, but Women Carry Water in Head Jars as in Delilah's Time

Gaza Clashes Echo Ancient Palestine Wars

Over one of the world's most ancient and continuous battlegrounds history is violently repeating itself. In Gaza where David slew Goliath and Samson crashed the temple walls down on the Philistines, intermittent fighting has been taking toll of Arab and Israeli since 1949 when the United Nations negotiated a Palestine truce.

Rifle bullets ping and mortar shells crash, jet planes whistle over land where a pharaoh of ancient Egypt vanquished Syrian hordes nearly 35 centuries ago and generals from Alexander the Great to Britain's Viscount Allenby led their troops.

The so-called Gaza strip is a remnant of old Palestine cut off from Israel by the United Nations' truce line. Egypt occupied the area in 1949 and now administers it. A quarter of a million Arab refugees from Israel crowd it to overflowing. Jammed into concrete-block buildings and fed by the United Nations Relief and Work Agency, these unfortunates give the Gaza area what is probably the world's highest unemployment rate. The UN is trying to train these people, mostly farmers, to take care of themselves.

The strip extends for some 26 miles along the Mediterranean, varying from four to eight miles in width. This strife-torn wedge of sandhills set between sea and Negev (Israel's southern desert jutting into the Gulf of 'Aqaba) is less dreary than most Middle East outposts. Springs and wells, unusual in the dusty Holy Land, bless it.

The city of Gaza stands on a rise near the strip's northern end. It is older than history—and looks it. Huge scattered stones could be

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AFTER A PAINTING BY N. C. WYETH

SANTA MARIA PLUNGES WESTWARD—Columbus's Famous Flagship, Wrecked on Hispaniola, Never Returned from the New World. But She Sails on in N. C. Wyeth's Colorful Mural of Discovery at National Geographic Society Headquarters in Washington

meet a hurricane which smashed vessels homeward bound from the struggling colony planted in Hispaniola in 1492. Columbus rode out the storm, repaired his damage, then ran west to Honduras. Following the coast southward, mostly in foul weather, he slipped past what are now Nicaragua, Costa Rica, Panama. Nowhere did an inlet or river mouth open up to become passage to India. Columbus spent some days in the Bay of Limon, now Caribbean entrance to the Panama Canal. He was four centuries too early to reach India that way.

Finally certain that he was skirting an isthmus, he identified it as the Malay Peninsula, gave up looking for a strait, and concentrated on finding gold. Lashed by downpours of tropical rain, the party made headquarters at Belén, on Panama's coast, and actually found gold deposits. But an attempt to build a settlement fizzled, Indians turned hostile, malaria struck, and ships' planking began to rot. The expedition pulled out, its remnants finally reaching Spain.

Broken in health, Columbus spun out his last years appealing to the court for restoration of his titles and privileges. He never knew what he had discovered; how firmly he had knitted the Old World to the New by charting routes that other generations of explorers would follow.

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Magazine—Sept., 1928, "Genoa, Where Columbus Learned to Love the Sea," ($2)

School Bulletins—Oct. 11, 1954, "Geographer's Error Named New World America," (10¢)

Decorative Picture—Western & Eastern Hemispheres: Two N. C. Wyeth Maps of Discovery showing in color the routes of great explorers, including Columbus; 18 x 15⅞ in. ($1.25 the pair)

UNITED NATIONS

WISTFUL ARAB REFUGEE Cuts Thread with Her Teeth, Uses Dolly as Model in a UN Sewing School

bits of the temple Samson wrecked. When the setting sun paints a crimson wash over squat, rectangular houses and sprawling bazaars, bulging domes and soaring minarets, Gaza looks like a colored illustration from *Arabian Nights.*

To north and east, *kibbutzim*—cooperative Israeli farms—pattern the land. Housing centers stand about two miles back from the truce line. A green sea of grain surges to meet it. Groves of oranges and lemons splash vivid golden polka dots, gray-green branches of olive trees stencil spots of shade on sun-steeped uplands.

Alexander the Great would note great changes in the land of his conquest, despite its air of antiquity. Irrigation and modern mechanical farm equipment have transformed this region of shifting sand and diminishing rivers. A million seedling trees anchor roving dunes. Cultivated fields replace arid stretches once broken only by black tents of the Bedouins.

On the kibbutzim, farmers drive bright red tractors, lay irrigation pipe lines, build homes, sheds, concrete shelters. Children splash in swimming pools or study lessons. Grandmothers sew. Sheep graze placidly. Modern Delilahs in flowing robes carry jars of water from the well.

Then, with darkness, comes a sinister change. Floodlights suddenly rim each Israeli farm with a blinding glare to spot infiltrating Arab partisans. Armed guards take posts. Inside Gaza, refugees huddle around radios, listening to threats in Arabic from Israeli broadcasters.

Recurring clashes recall the strife of Bible times. But hard-working officials meeting in "Kilo 95," the rusty, shell-scarred hut on the Gaza-Jerusalem road, hope to solve the problems that beset both sides in this modern echo of ancient conflict.

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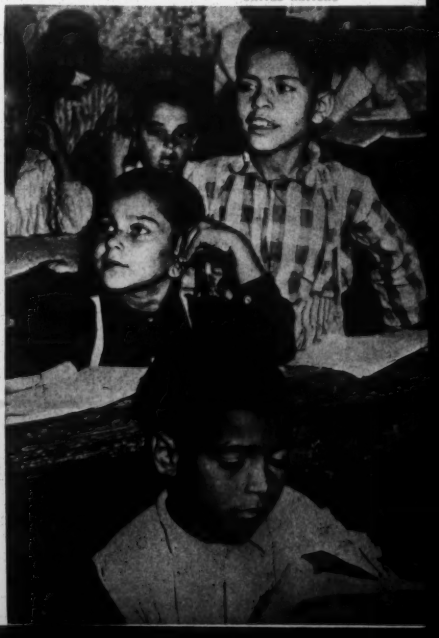

SPELLBOUND IN A GAZA SCHOOL—Arab Refugee Boys Give History Teacher Rapt Attention in a Land Whose Story Was Old Before Christ

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